

REMARKS

Applicant appreciates the thorough examination of the present application as evidenced by the Office Action of July 21, 2010 (hereinafter "Office Action"). In response, Applicant has amended the pending claims as indicated above to clarify the recitations thereof.

In particular, Claims 1, 4, 10, and 13 have been amended to clarify that the music file recited therein is "a music score file" as described, for example, in the present specification at Page 1, lines 27-30; Page 9, lines 15-18; and Page 10, lines 13-15.

Also, new Claims 15 and 16 have been added to clarify that "an entirety" of the frequency data for the music score file may be transposed to a higher frequency range, as described, for example, in the present specification at Page 10, lines 13-15 ("the score is adapted as a whole to the transmission characteristic of a small size loudspeaker by transposing it upwards by a certain frequency interval").

Claim 14 has also been amended to address the Section 101 rejections thereof, as discussed in greater detail below. No new matter has been added.

Accordingly, Applicant respectfully requests further consideration of the pending claims and allowance of the present application for at least the reasons that follow.

Status of the Claims

Claim 14 stands rejected under 35 USC §101 as being directed to non-statutory subject matter.

Claims 1-5 and 7-14 stand rejected under 35 USC §102(b) as being anticipated by U.S. Patent Application Publication No. 2001/0049994 to Wachi et al. ("Wachi").

Claim 6 stands rejected under 35 USC §103(a) as being unpatentable over Wachi.

The Section 101 Rejections

Claim 14 stands rejected under 35 USC §101 as being directed to non-statutory subject matter due to the Examiner's interpretation of the "computer readable storage medium" recited therein as a signal per se. *See* Office Action, Page 2. In response, Applicant has amended Claim 14 to clarify that the computer readable storage medium recited therein is a "non-transitory" computer readable storage medium, in accordance with the January 26, 2010 directive from Director Kappos regarding "Subject Matter Eligibility of Computer

Readable Media." Accordingly, Applicant submits that amended Claim 14 is clearly directed to a statutory subject matter, and Applicant therefore respectfully requests withdrawal of the Section 101 rejection of Claim 14 for at least these reasons.

The Section 102 Rejections

Independent Claim 1 Is Patentable Over Wachi

Independent Claim 1 stands rejected under 35 USC §102(b) as being anticipated by Wachi. *See* Office Action, Page 5. Amended Claim 1 recites:

1. A method for modifying a sound reproduction of a music file according to a transmission characteristic of a loudspeaker of a mobile terminal of a wireless communication system, the method comprising:
identifying audio data in the music file which represent a sound with a spectral component below a transmission frequency range of the loudspeaker; and

modifying a sound reproduction of the identified audio data such that the modified sound reproduction yields a sound spectrum having an increased energy content within the transmission frequency range of the loudspeaker as compared to a sound spectrum of an unmodified sound reproduction,

wherein the music file is a music score file, and wherein the modified sound reproduction is based on **replacing a specification provided in the music score file for an instrument used to reproduce sound** from the identified audio data **with a substitute specification of an instrument with brighter timbre**. (*Emphasis added*).

Applicant submits that Wachi fails to disclose or suggest at least the above-highlighted recitations of Claim 1, for the following reasons.

First, Wachi does not disclose or suggest "**a specification provided in the music score file for an instrument used to reproduce sound**" from identified audio data, as recited by Claim 1. While Wachi may generally disclose the use of MIDI files, as noted by the Office Action in its rejection of Claim 2 (*see* Office Action, Page 5), Wachi does not disclose or suggest that such MIDI files include a specification for an instrument used to reproduce the sounds represented by the file. At best, Wachi notes:

Performance information (for example, an SMF (standard MIDI format) file) for reproducing a ringing sound signaling an incoming call is stored in the ROM 122 or the RAM 124 in the portable phone. When the portable phone receives an incoming call, the music performance information is reproduced, and MIDI events are sequentially inputted from the CPU 120 to the sound source 110. A musical tone waveform is synthesized in the

sound source 110 based on this input. The detail of this sound source control processing will now be described with reference to FIG. 17.

Wachi, Paragraph 0182 (*underline added*). Accordingly, while Wachi may generally describe storing information for reproducing a ringing sound, the cited portions of Wachi do not disclose or suggest a specification of a particular instrument to be used in reproducing the sound described therein, as recited by Claim 1.

Second, Wachi does not disclose or suggest **"replacing a specification provided in the music score file...with a substitute specification of an instrument with brighter timbre,"** as recited by Claim 1. Indeed, such a replacement requires a music score file that specifies particular instruments for reproducing sound; however, as discussed above, Wachi provides no mention of such a specification of an instrument in the MIDI files described therein. Thus, Wachi necessarily does not disclose or suggest replacing such a specification of an instrument "with a substitute specification of an instrument with brighter timbre," as recited by Claim 1.

Accordingly, as Wachi fails to disclose or suggest at least the above recitations of Claim 1, Applicant submits that the Office Action has failed to establish a finding of anticipation, and that Claim 1 is patentable for at least these reasons. Dependent Claims 2, 3, and 14 are also patentable at least per the patentability of Claim 1 from which they depend.

Independent Claim 4 Is Patentable Over Wachi

Independent Claim 4 also stands rejected under 35 USC §102(b) as being anticipated by Wachi. *See* Office Action, Page 5. Amended Claim 4 recites, in part:

modifying a sound reproduction of the identified audio data such that the modified sound reproduction yields a sound spectrum having an increased energy content within the transmission frequency range of the loudspeaker as compared to a sound spectrum of an unmodified sound reproduction,

wherein the music file is a music score file, and wherein the modified sound reproduction is based on a **transposition of frequency data in the music score file to a higher frequency range.** (*Emphasis added*).

As described in greater detail the present specification, "[b]y transposing the music score upwards, all or at least nearly all frequencies in the sound spectrum are shifted upwards into the frequency range of the small size loudspeaker." Specification, Page 10, lines 13-19.

Applicant submits that Wachi fails to disclose or suggest at least **"transposition of frequency data in the music score file to a higher frequency range,"** as recited by Claim 4. Wachi describes that, if a pitch designated in a sounding instruction is lower than a critical pitch associated with a speaker, a second waveform signal (including at least two overtones that are higher than the critical pitch) is generated to provide a "pseudo" low tone. *See* Wachi, Abstract. For example, Wachi notes that "a frequency (240Hz) higher than the lowest frequency (120Hz)...is set as the pseudo low tone start frequency." Wachi, Paragraph 0272. Wachi further notes that the pseudo low tone is generated only when the designated pitch is lower than the critical pitch; when the designated pitch is not lower than the critical pitch of the speaker, a first waveform signal containing a tone corresponding to the designated pitch is generated. *See* Wachi, Abstract. Moreover, Wachi notes that "the first waveform signal and the second waveform signal are mixed with each other to provide the music tone containing the pseudo low tone. Wachi, Paragraph 0008. *See also* Wachi, Paragraphs 0009 to 0014. Accordingly, in Wachi, the generated overtones included in the second waveform signal are added to the first waveform signal, which does not disclose or suggest transposing frequency data to a higher frequency range.

Thus, as Wachi fails to disclose or suggest at least the above recitations of Claim 4, Applicant submits that the Office Action has failed to establish a finding of anticipation, and that Claim 4 is patentable for at least these reasons. Dependent Claims 5-9 are also patentable at least per the patentability of Claim 4 from which they depend.

Independent Claim 10 Is Patentable Over Wachi

Independent Claim 10 also stands rejected under 35 USC §102(b) as being anticipated by Wachi. *See* Office Action, Page 3. However, Applicant notes that amended Claim 10 includes recitations of providing a modified music score file **"by replacing a specification of an instrument provided in the music score file for the identified audio data with a substitute specification of an instrument having brighter timbre,"** and/or **"by transposing frequency data in the music score file to a higher frequency range,"** as similarly recited by Claims 1 and 4, respectively. Accordingly, Applicant submits that Claim 10 is patentable over Wachi for at least the reasons discussed above with reference to Claims 1 and 4. Dependent Claims 11-13 are also patentable at least per the patentability of Claim 10 from which they depend.

Many of the Dependent Claims Are Separately Patentable

Applicant further submits that several of the dependent claims contain separate bases for patentability. For example, new Claim 15 recites that "**the modified sound reproduction is based on a transposition of an entirety of the frequency data in the music score file to a higher frequency range.**" While Wachi may at best describe generating a "pseudo" low tone (including higher pitch overtones) for those particular music tones that designate a pitch below the critical pitch of the speaker, Wachi does not disclose or suggest transposing an entirety of the frequency data in a music file to a higher frequency range; rather, in instances when the designated pitch is not lower than the critical pitch of the speaker, a first waveform signal containing a tone corresponding to the designated pitch is generated. *See* Wachi, Abstract. In other words, generating a higher-pitch waveform only for particular low-frequency tones does not disclose or suggest transposing all of the frequency data in a music score file to a higher frequency. Thus, Applicant submits that Claim 15 is separately patentable for at least these reasons. New Claim 16 includes similar recitations, and is thus patentable for at least similar reasons.

Conclusion

Accordingly, based on the above amendments and remarks, Applicant submits that the pending claims are now in condition for allowance. Thus, Applicant respectfully requests allowance of these claims and passing the application to issue. Applicant encourages the Examiner to contact the undersigned to resolve any remaining issues.

Respectfully submitted,



Rohan G. Sabapathypillai
Registration No.: 51,074

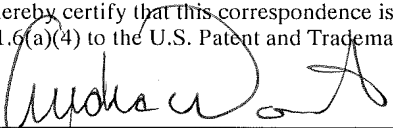
USPTO Customer No. 54414
Myers Bigel Sibley & Sajovec
Post Office Box 37428
Raleigh, North Carolina 27627
Telephone: 919/854-1400
Facsimile: 919/854-1401

In re: Thomas Lechner
Application No.: 10/570,901
Filed: March 7, 2006
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Telephone: 919/854-1400
Facsimile: 919/854-1401

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Audra Wooten